

FIG.1

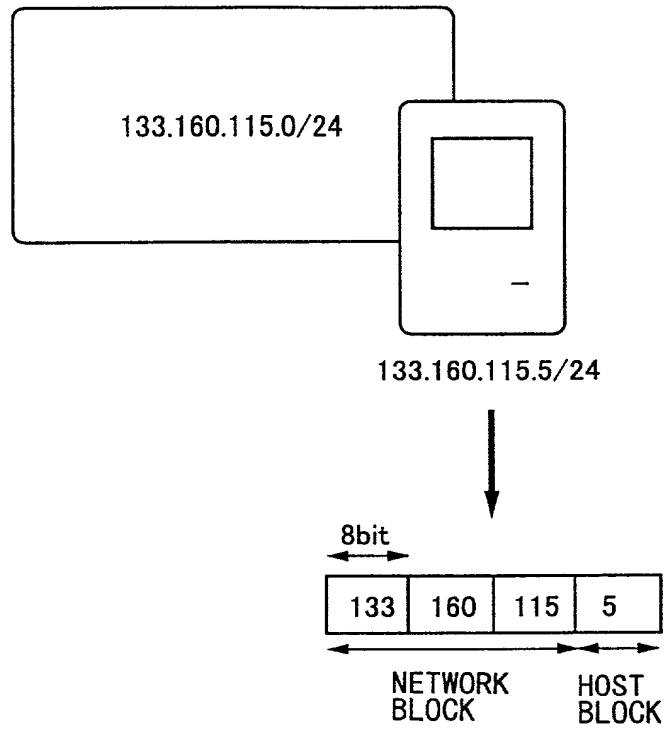


FIG. 2

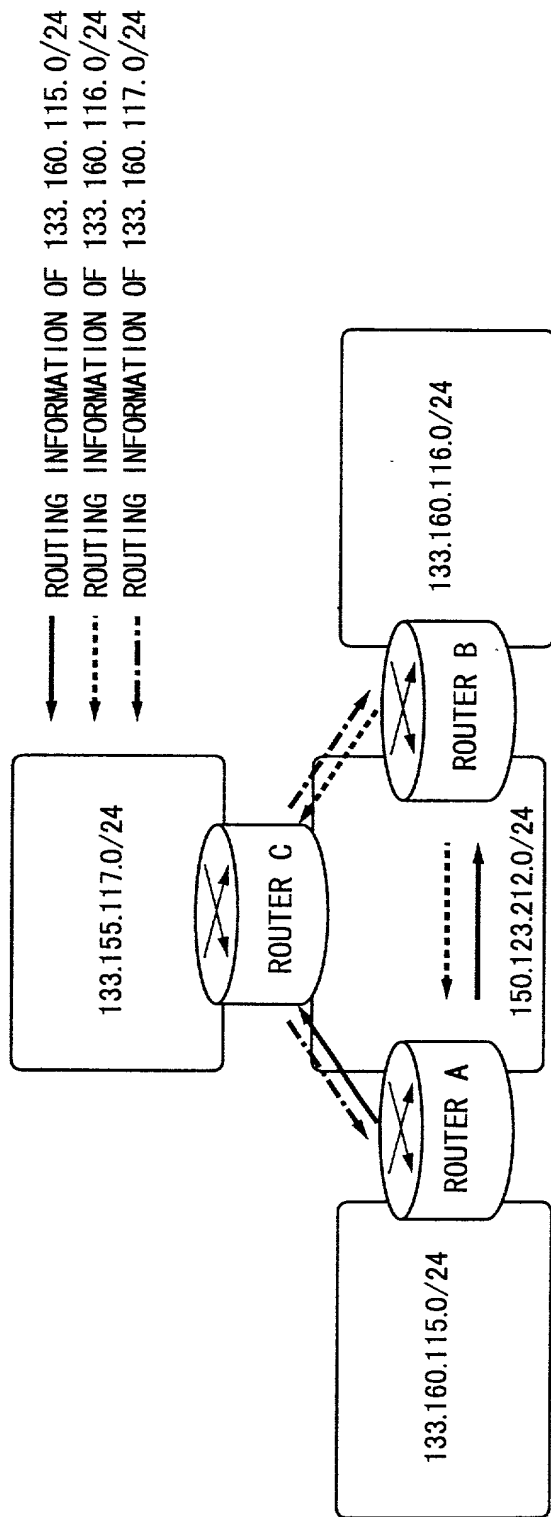


FIG. 3

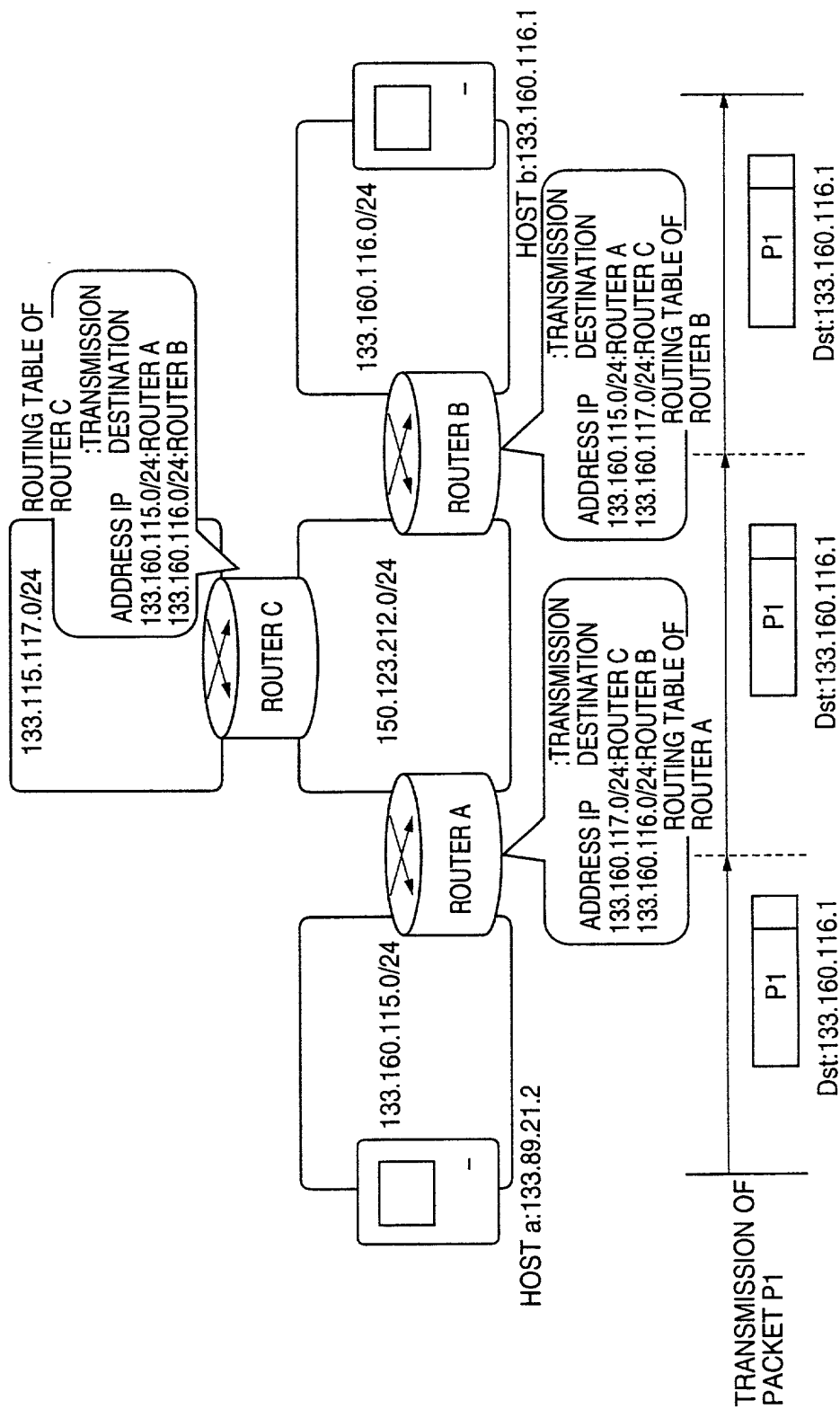


FIG. 4

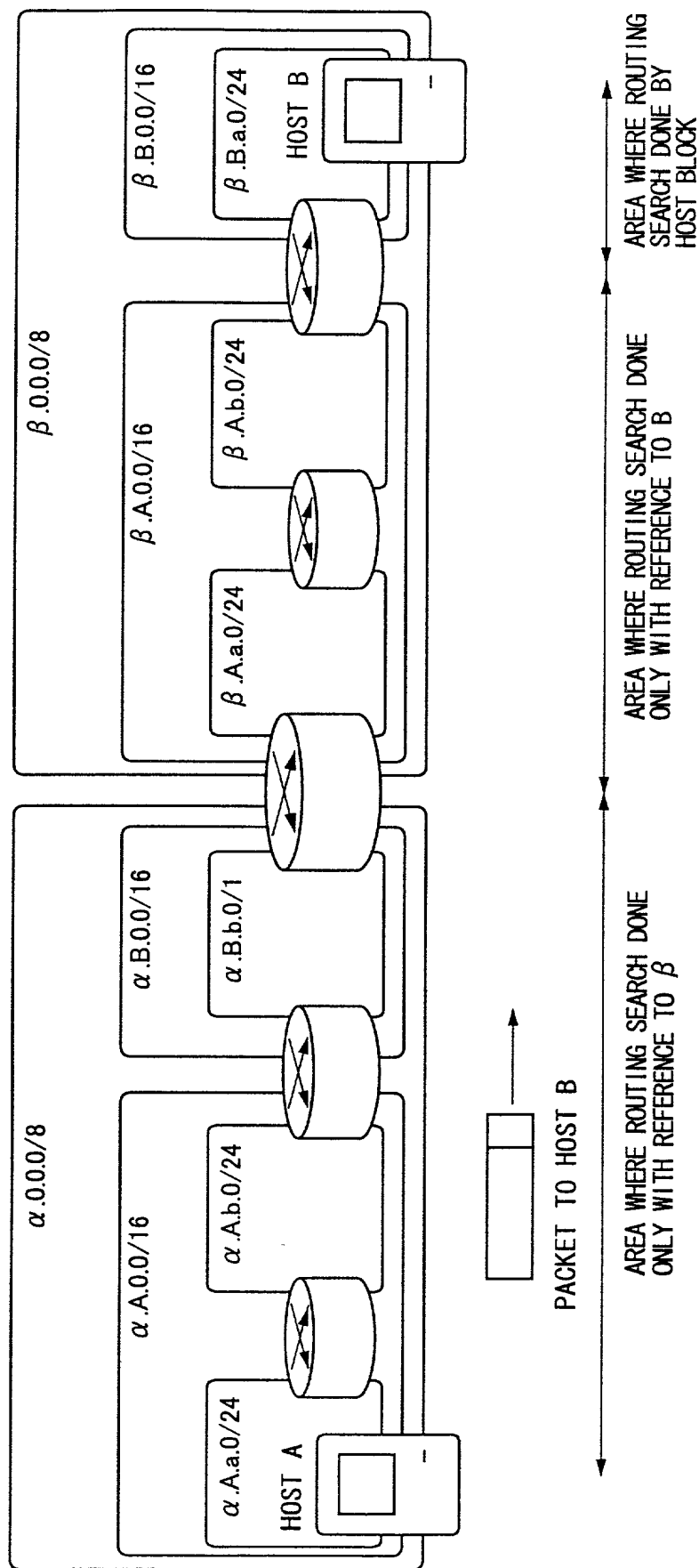


FIG.5

3	13	8	24	16	64 bits
FP	TLA	RES	NLA	SLA	Interface ID
	ID		ID	ID	

001

Format Prefix (3 bit) for Aggregatable Global Unicast Addresss

TLA ID

Top-Level Aggregation Identifier

RES

Reserved for future use

NLA ID

Next-Level Aggregation Identifier

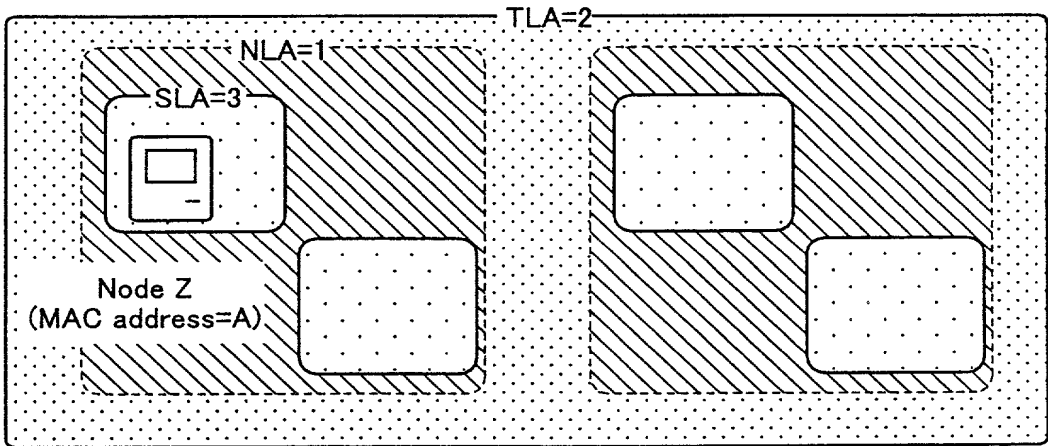
SLA ID

Site-Level Aggregation Identifier

INTERFACE ID

Interface Identifier

FIG.6



- HIERARCHY OF TLA LEVEL
- HIERARCHY OF NLA LEVEL
- HIERARCHY OF SLA LEVEL

3	13	8	24	16	64 bits
FP	TLA	RES	NLA	SLA	Interface ID
	ID		ID	ID	=A
	=2		=1	=3	

IP ADDRESS OF NODE 2

FIG. 7

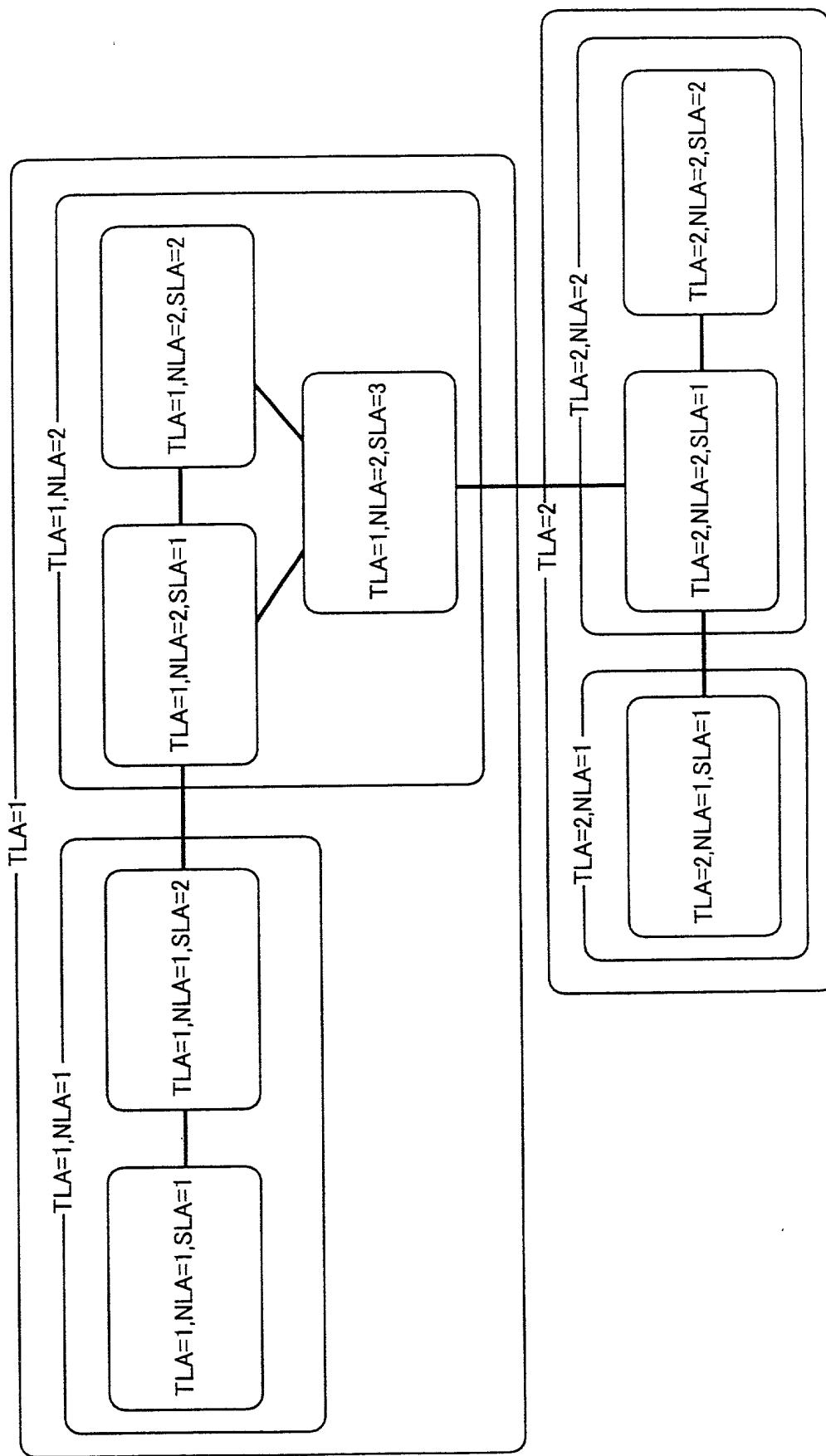


FIG.8

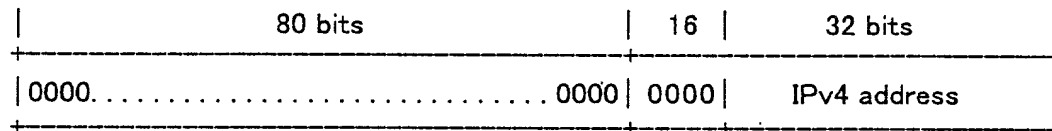


FIG.9

TLA ID= α

NLA ID= β

ROUTING TABLE OF ROUTER A																																	
HIERARCHIAL ROUTING TABLE	CONVENTIONAL ROUTING TABLE																																
<table><tr><th>ADDRESS</th><th>NEXT ROUTER</th></tr><tr><td>SLA ID=3</td><td>ROUTER B</td></tr><tr><td>SLA ID=4</td><td>ROUTER C</td></tr><tr><td>SLA ID=1</td><td>DIRECT</td></tr><tr><td>SLA ID=2</td><td>DIRECT</td></tr><tr><td>⋮</td><td>⋮</td></tr></table>	ADDRESS	NEXT ROUTER	SLA ID=3	ROUTER B	SLA ID=4	ROUTER C	SLA ID=1	DIRECT	SLA ID=2	DIRECT	⋮	⋮	<table><tr><th>ADDRESS</th><th>NEXT ROUTER</th></tr><tr><td>SLA ID=3</td><td>ROUTER B</td></tr><tr><td>AA.BB.CC.00/24</td><td>ROUTER B</td></tr><tr><td>SLA ID=3</td><td>ROUTER B</td></tr><tr><td>AA.BB.DD.00/24</td><td>ROUTER C</td></tr><tr><td>SLA ID=4</td><td>ROUTER C</td></tr><tr><td>AA.BB.EE.00/24</td><td>DIRECT</td></tr><tr><td>SLA ID=2</td><td>DIRECT</td></tr><tr><td>SLA ID=1</td><td>DIRECT</td></tr><tr><td>⋮</td><td>⋮</td></tr></table>	ADDRESS	NEXT ROUTER	SLA ID=3	ROUTER B	AA.BB.CC.00/24	ROUTER B	SLA ID=3	ROUTER B	AA.BB.DD.00/24	ROUTER C	SLA ID=4	ROUTER C	AA.BB.EE.00/24	DIRECT	SLA ID=2	DIRECT	SLA ID=1	DIRECT	⋮	⋮
ADDRESS	NEXT ROUTER																																
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⋮	⋮																																

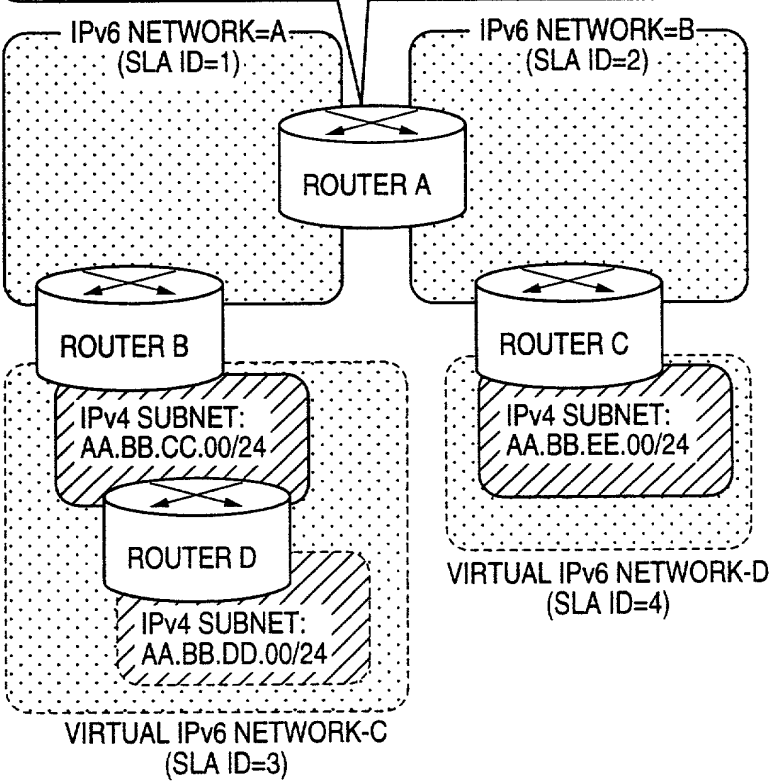


FIG.10

3	13	8	24	16	64 bits
FP	TLA ID	RES	NLA ID	SLA ID	Interface ID All 0

IPv6 NETWORK ADDRESS

3	13	8	24	16	64 bits
FP	TLA ID	RES	NLA ID	SLA ID	Interface ID 32bit=0, AA.BB.CC.0

IPv4 NETWORK ADDRESS

3	13	8	24	16	64 bits
FP	TLA ID	RES	NLA ID	SLA ID	Interface ID Layer2 address

IPv6 HOST ADDRESS

FIG.11

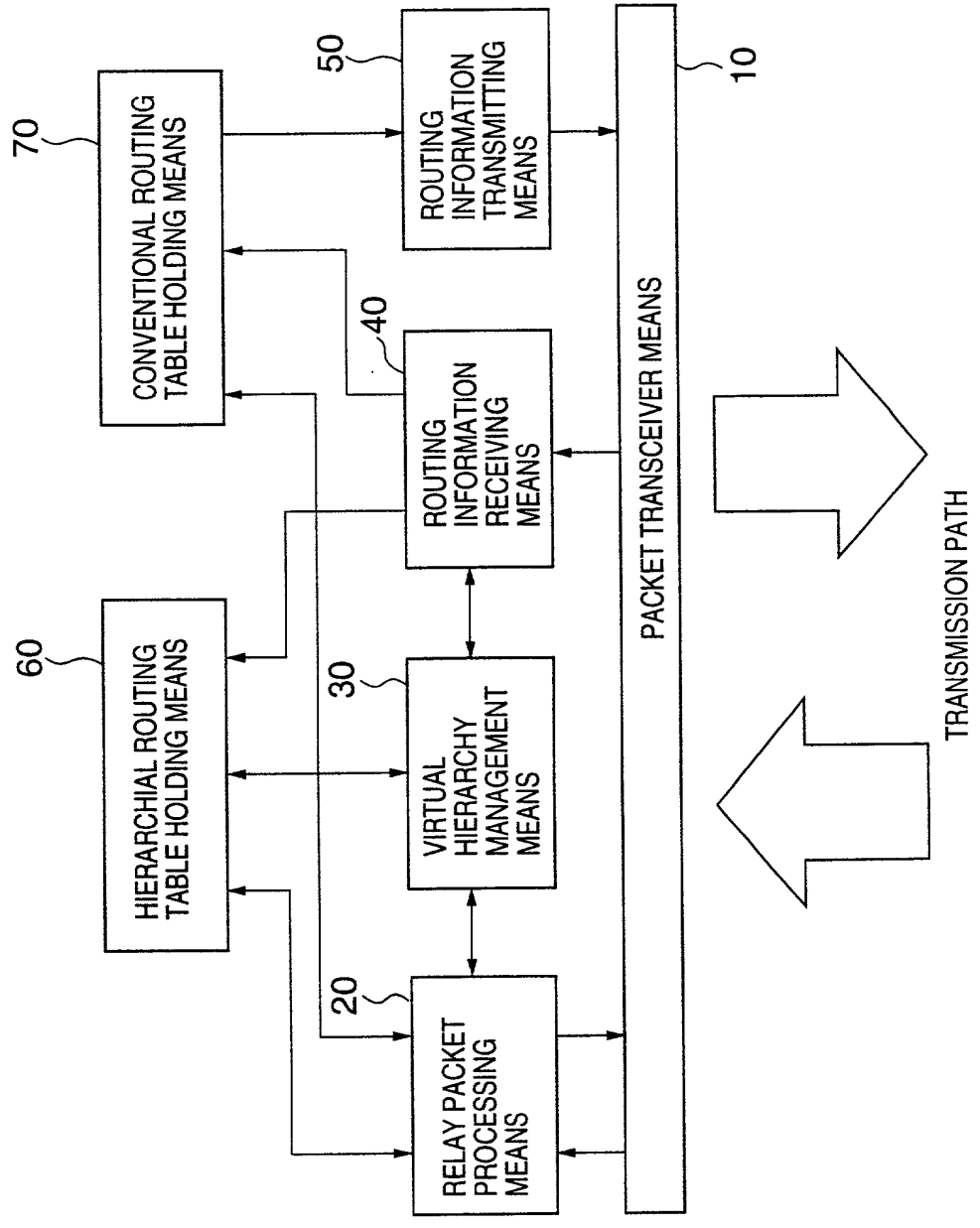


FIG.12

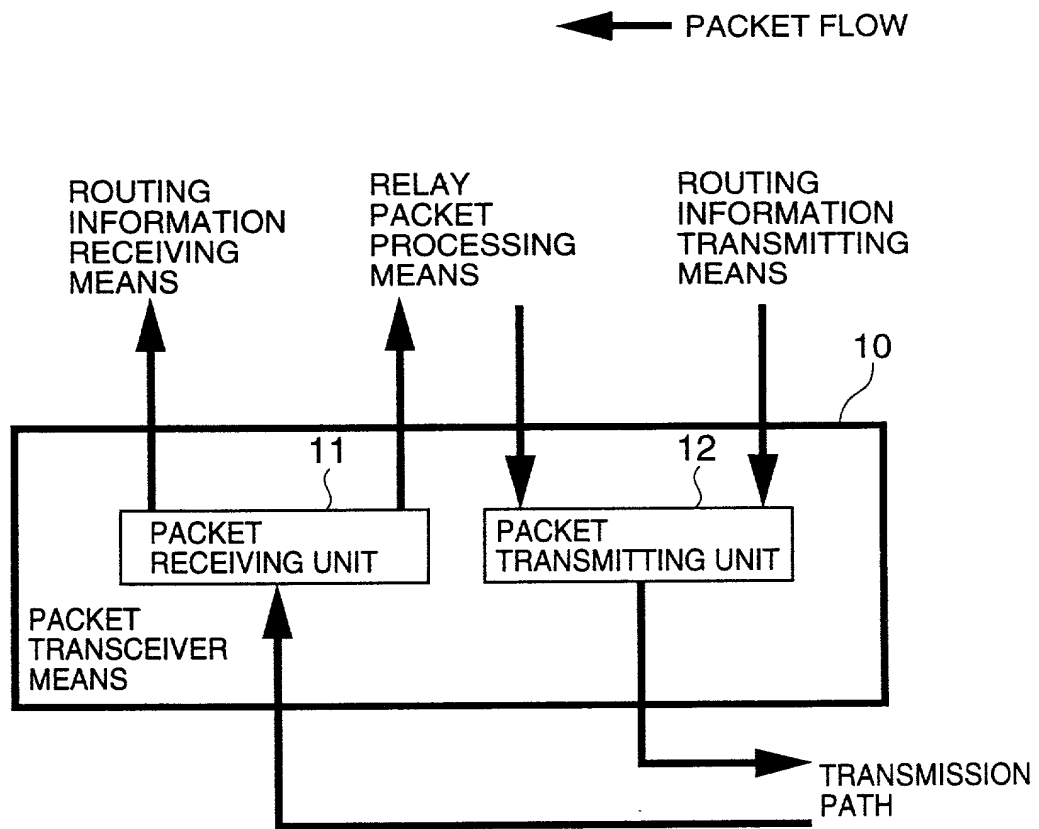


FIG.13

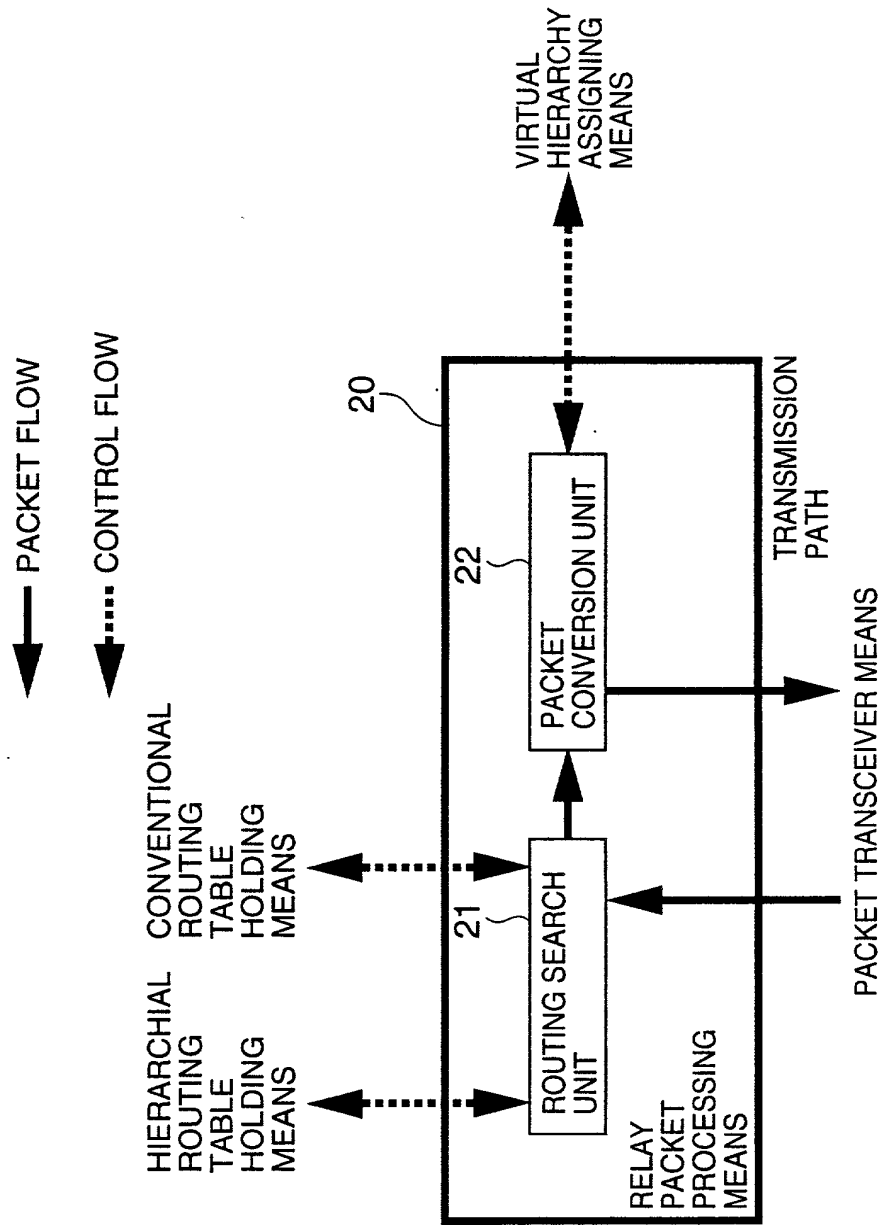


FIG.14

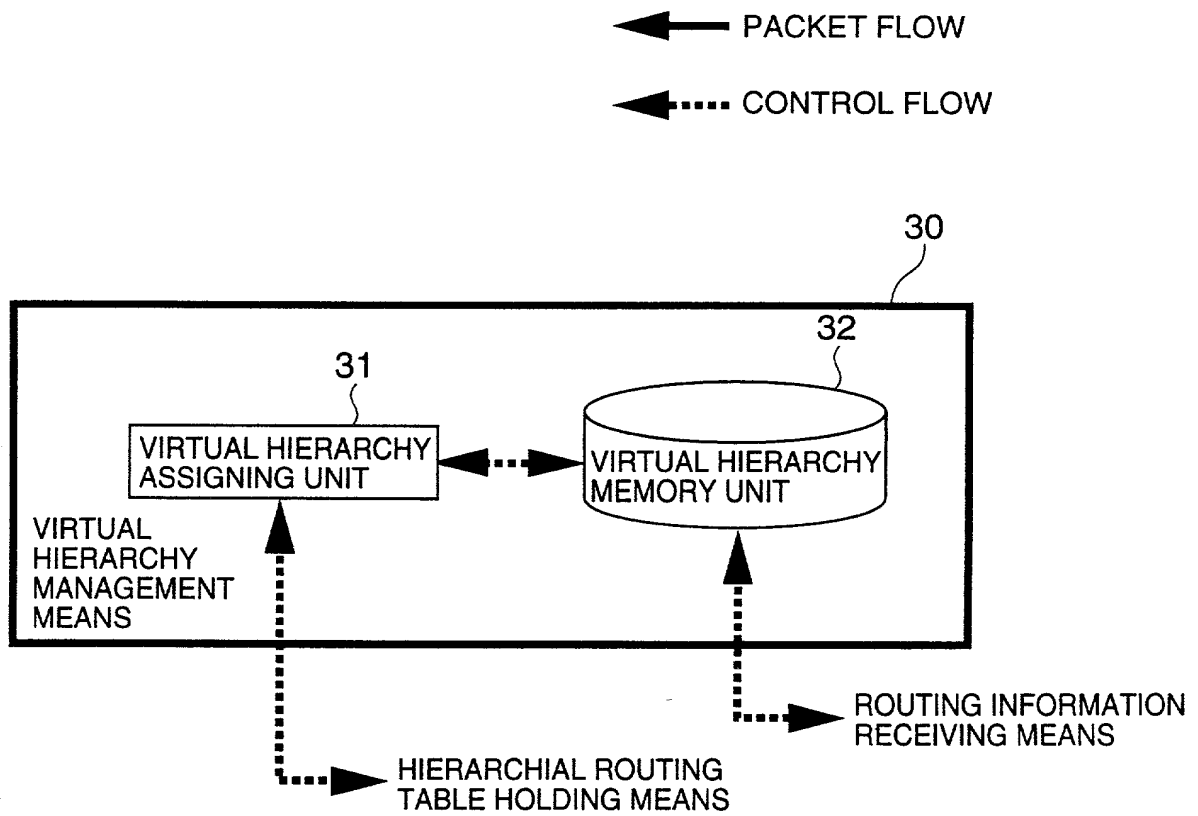


FIG.15

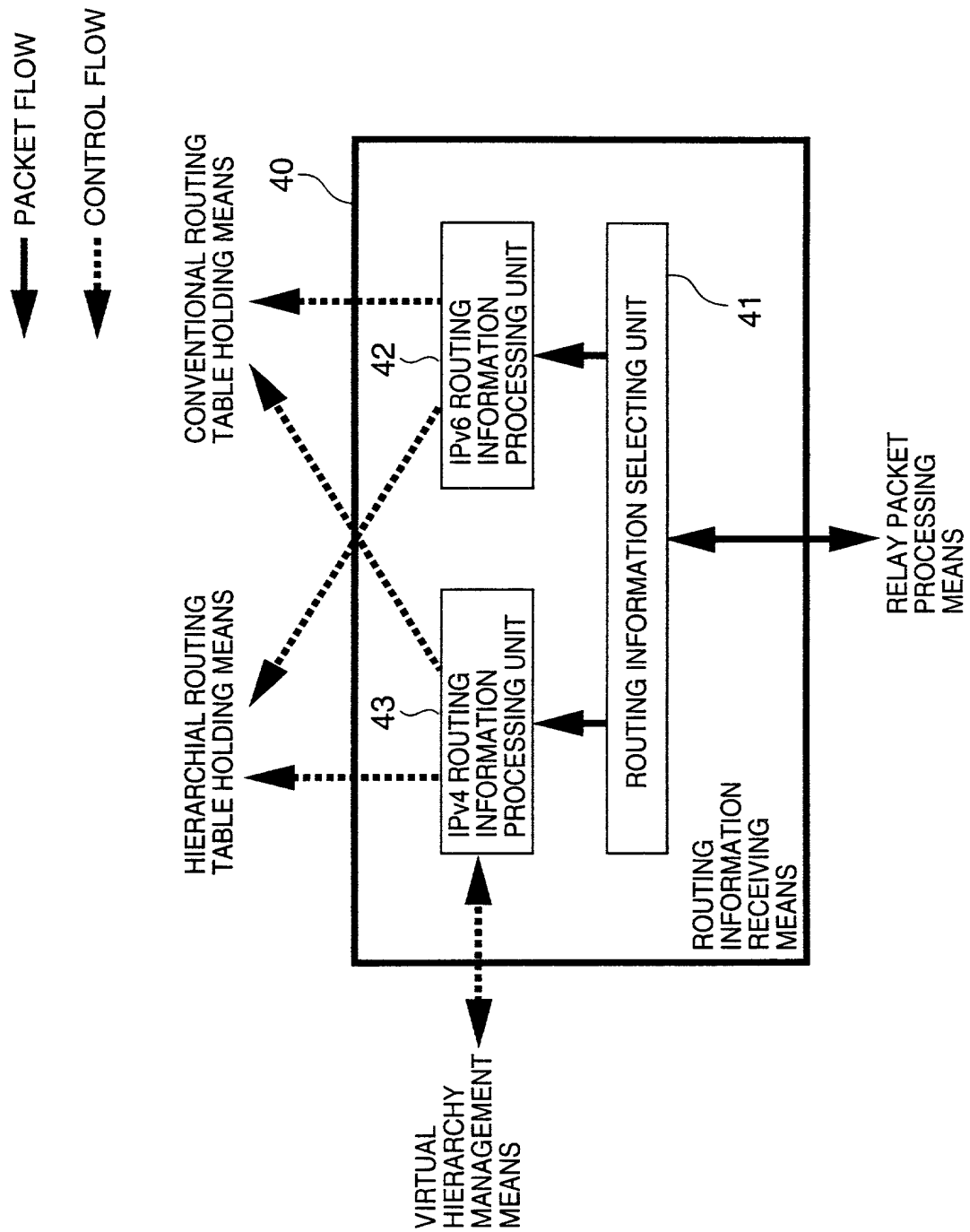


FIG.16

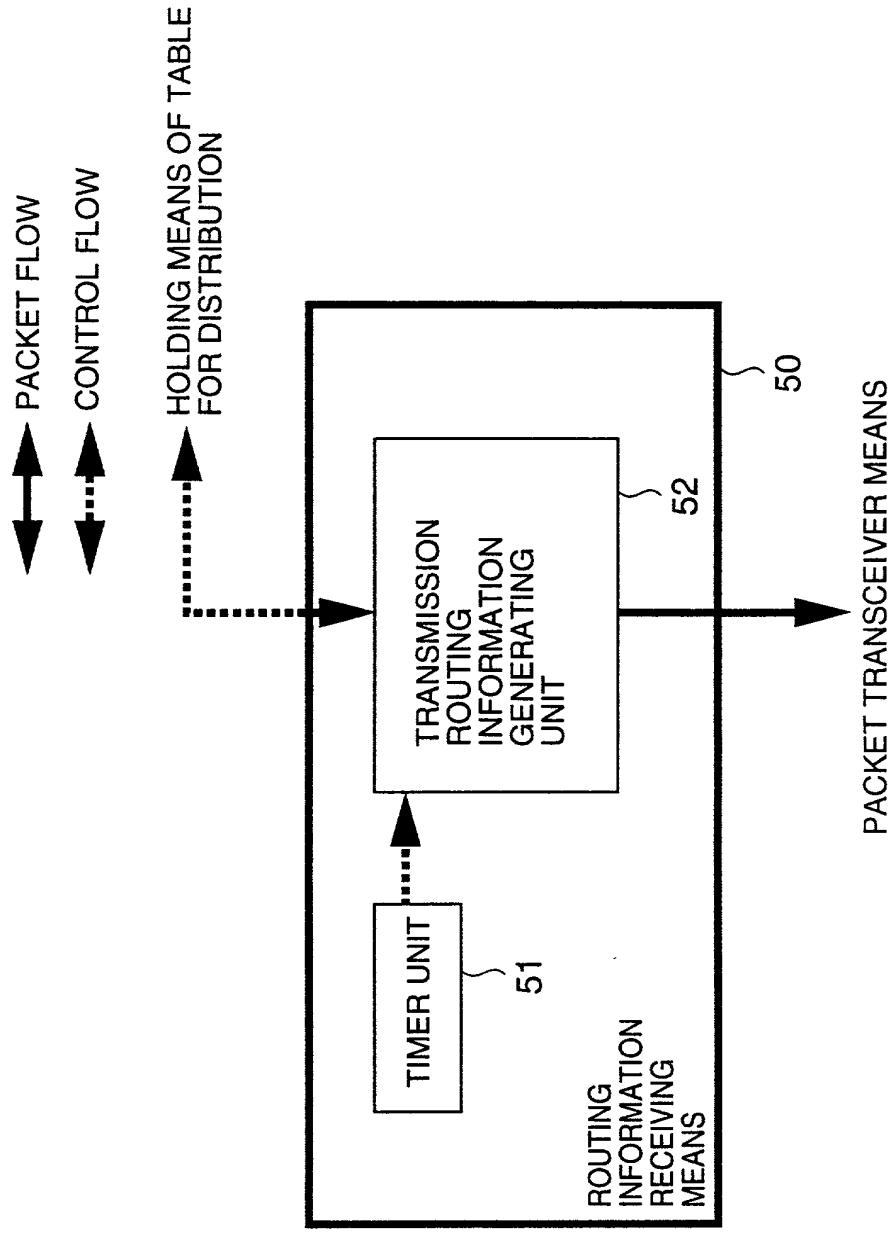


FIG.17

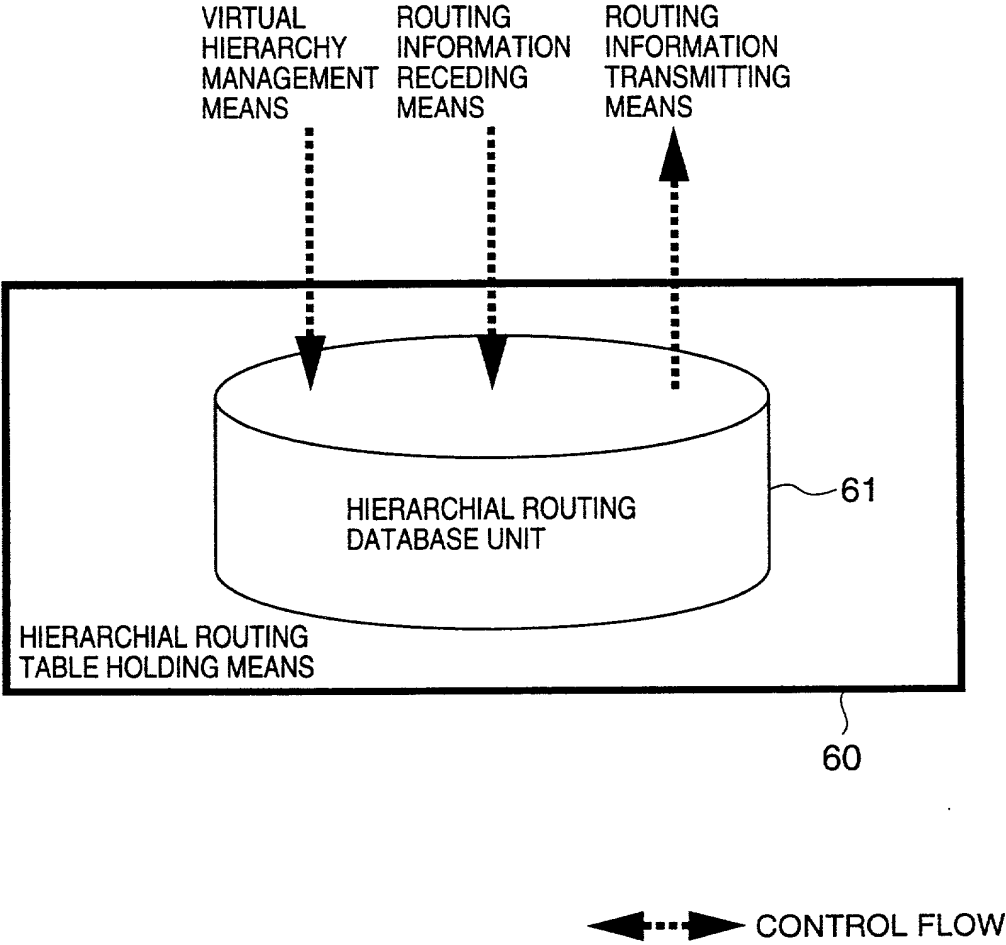


FIG.18

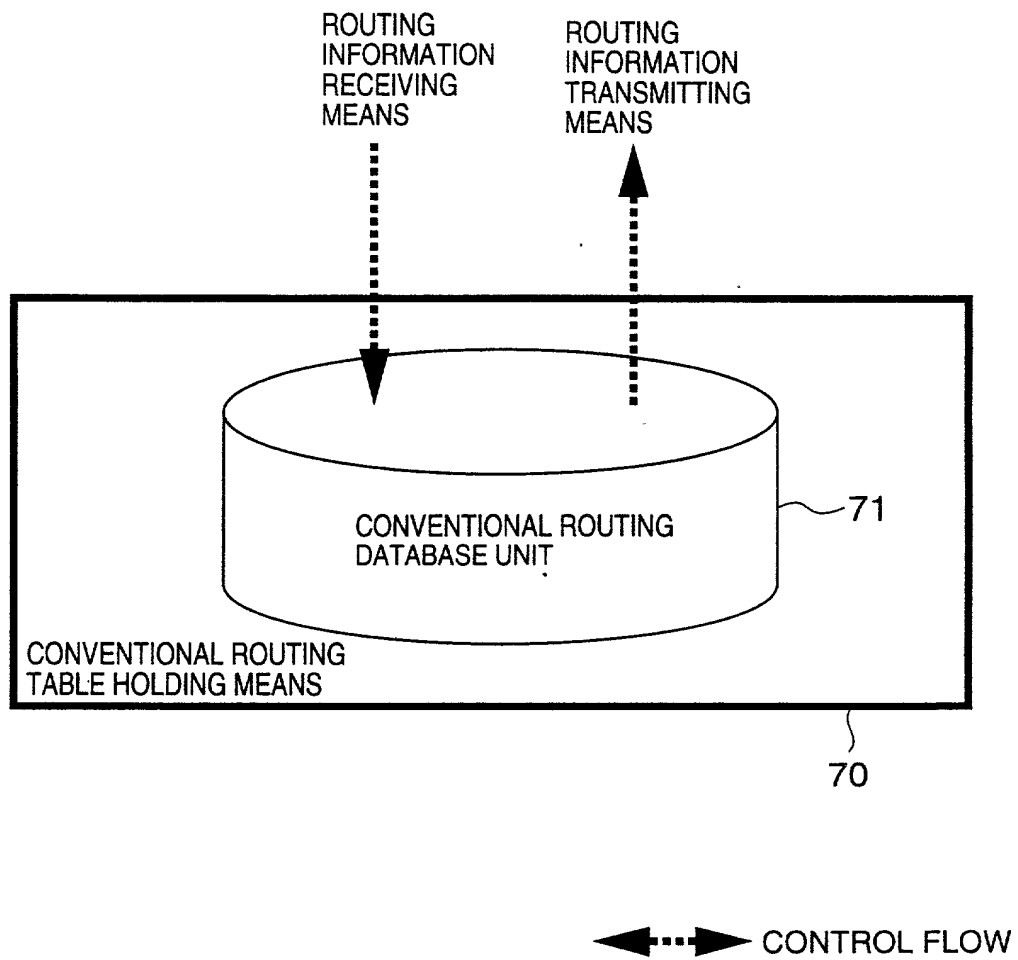


FIG.19

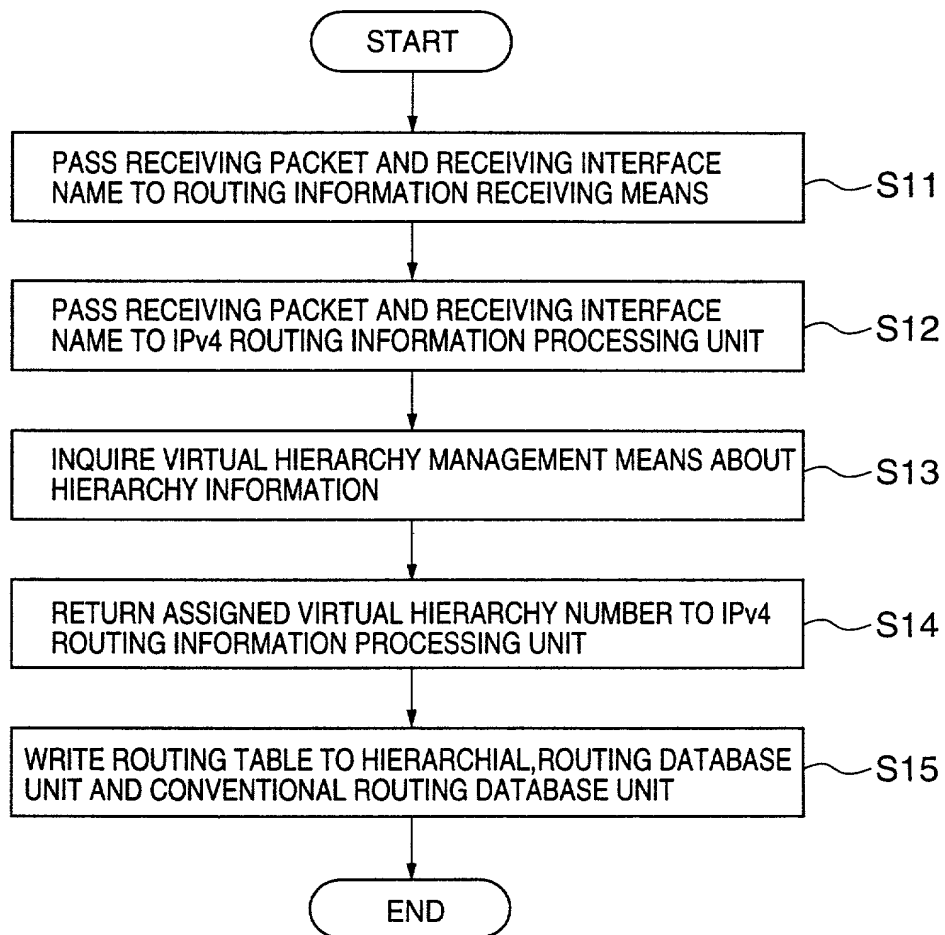


FIG.20

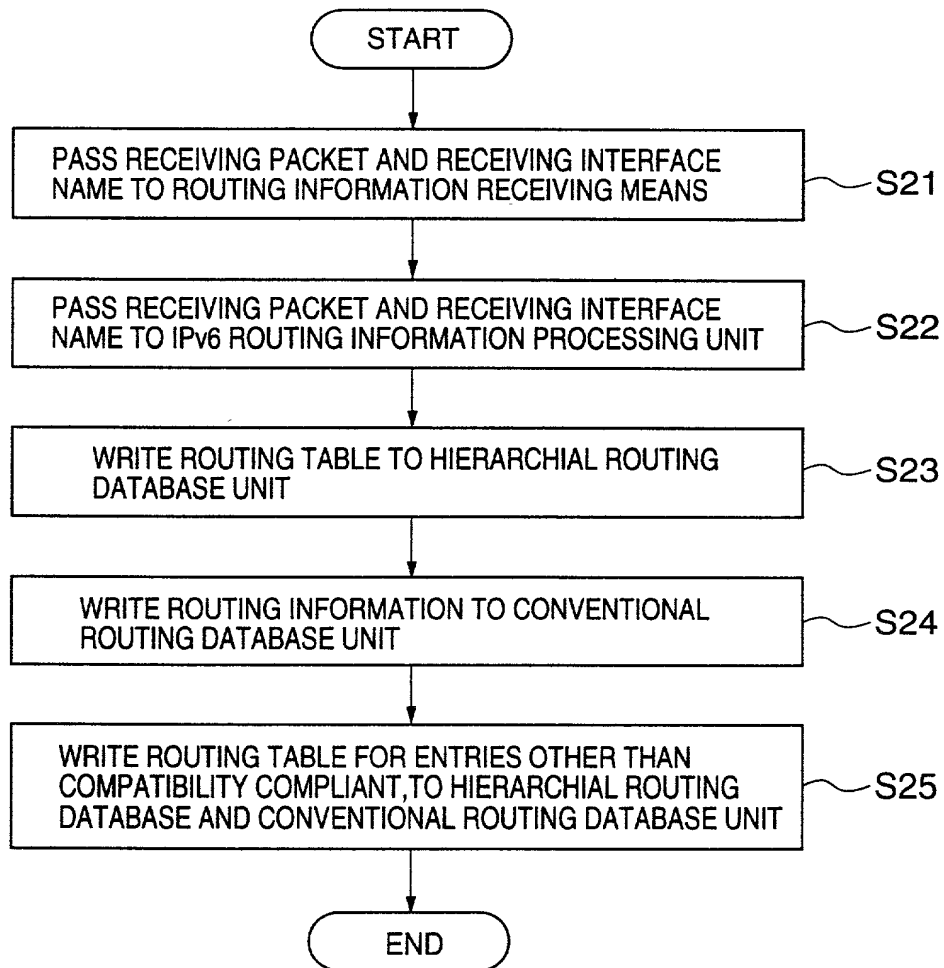


FIG.21

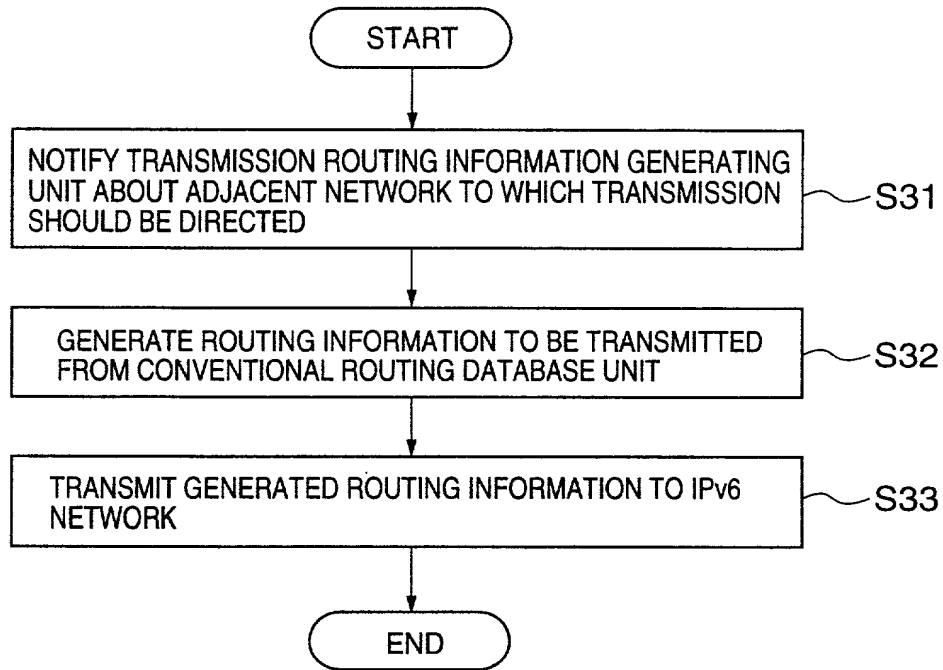


FIG.22

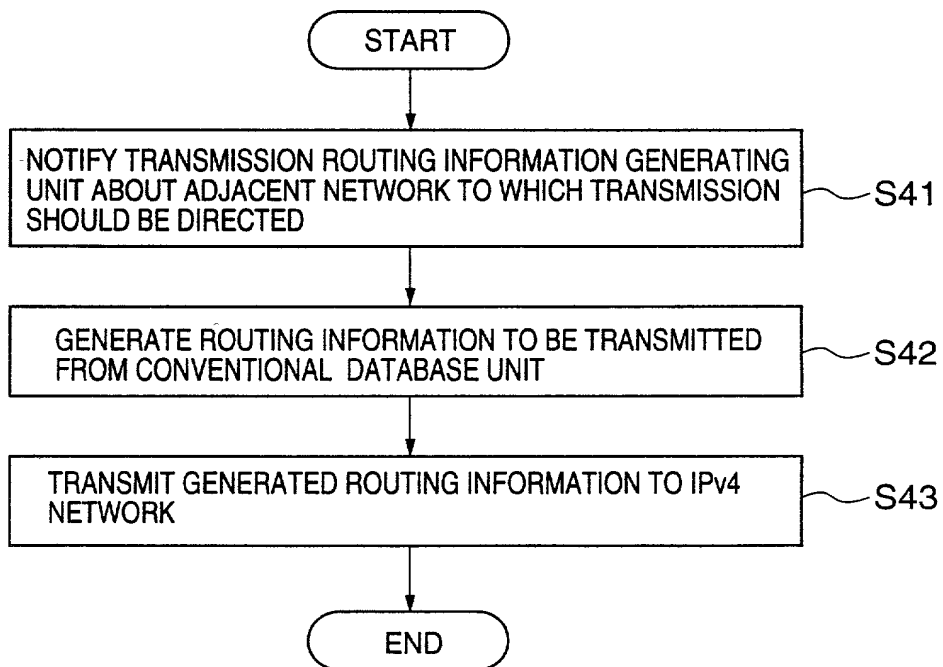


FIG.23

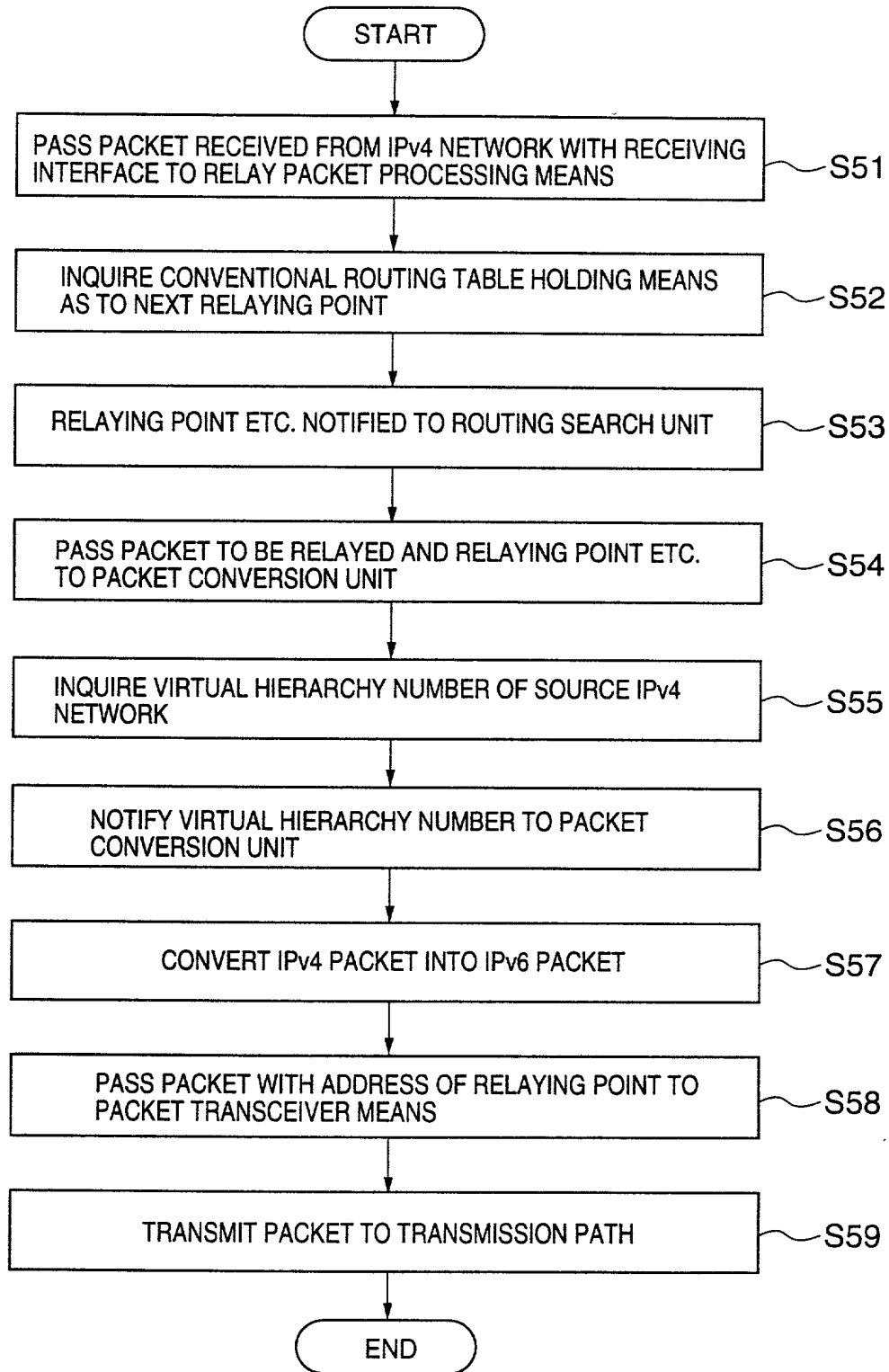


FIG.24

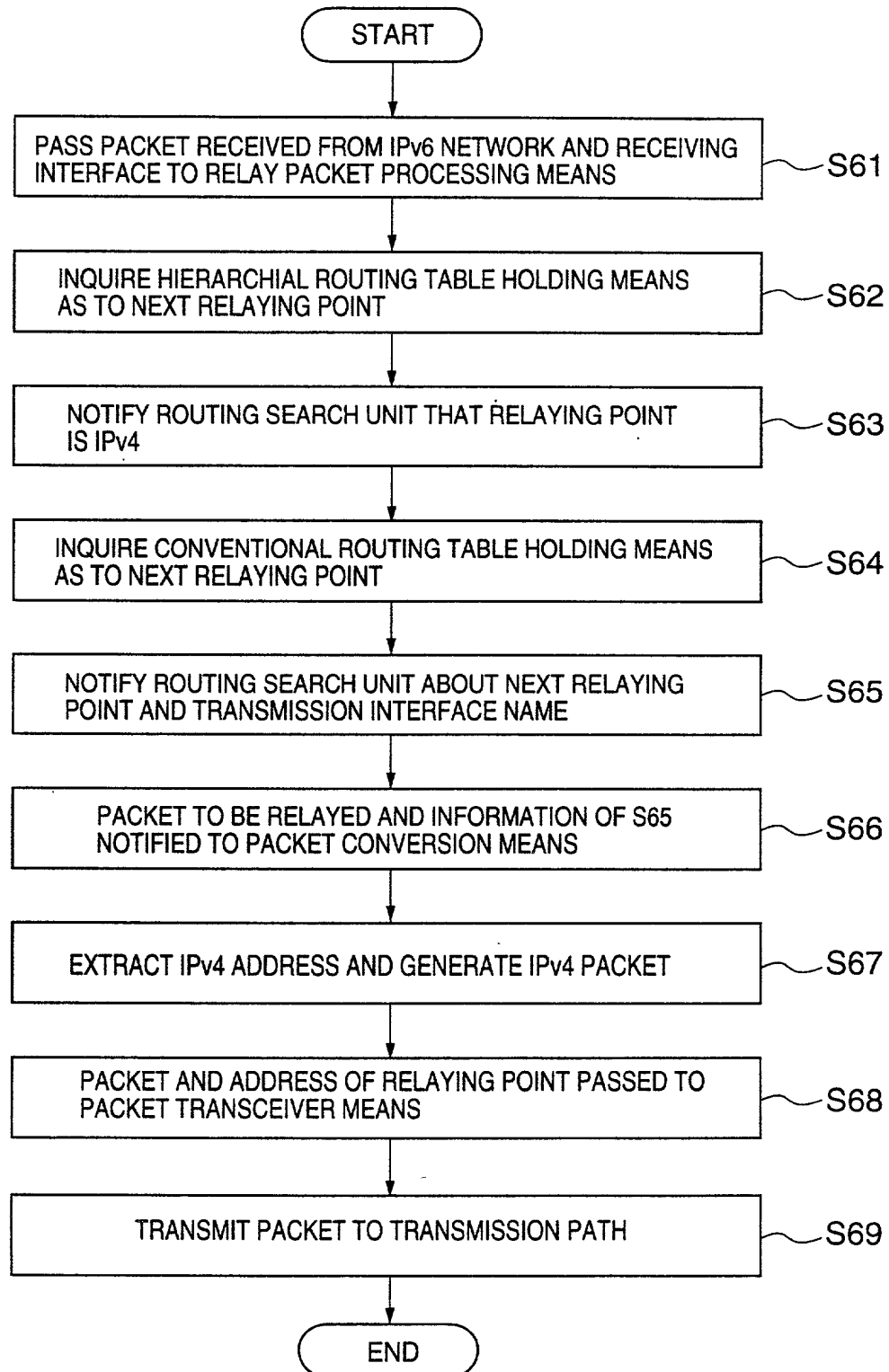


FIG.25

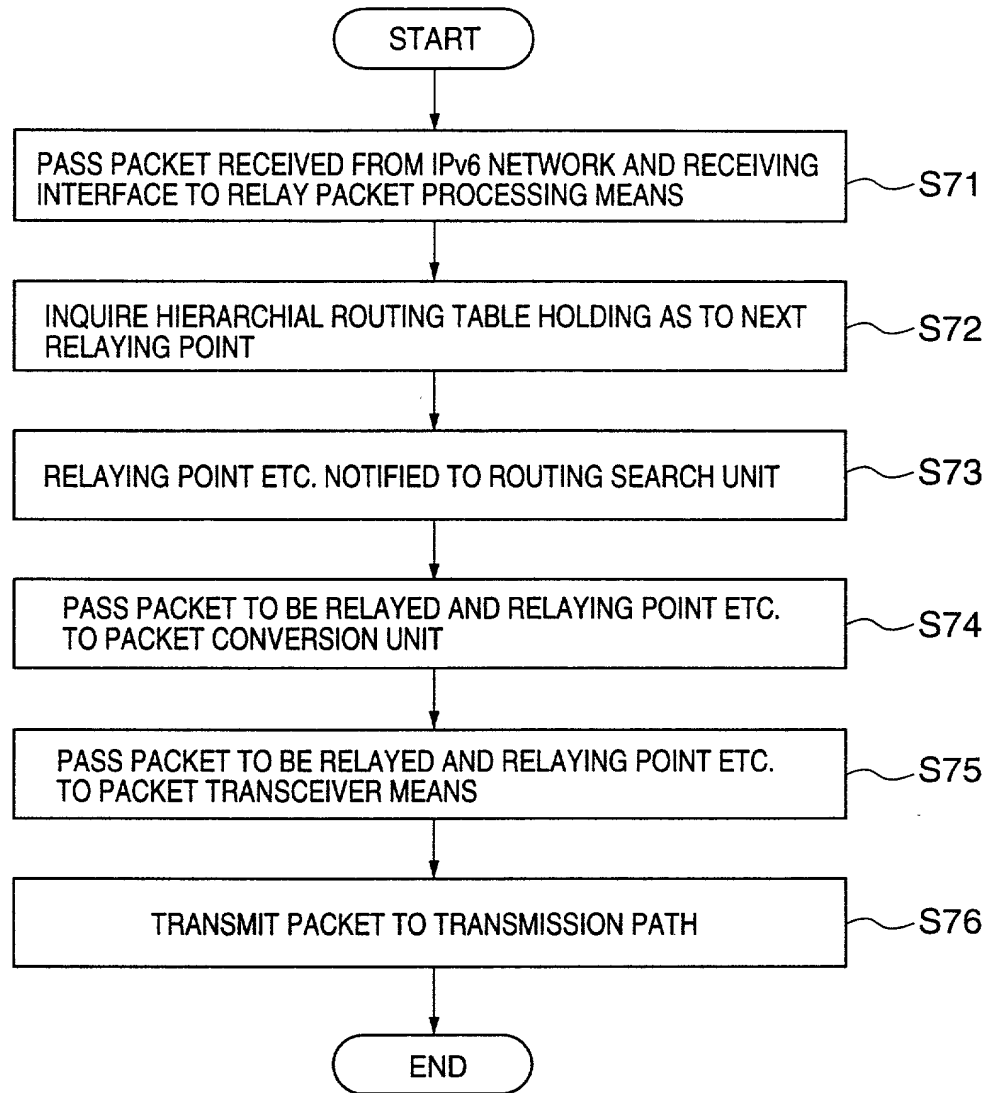


FIG.26

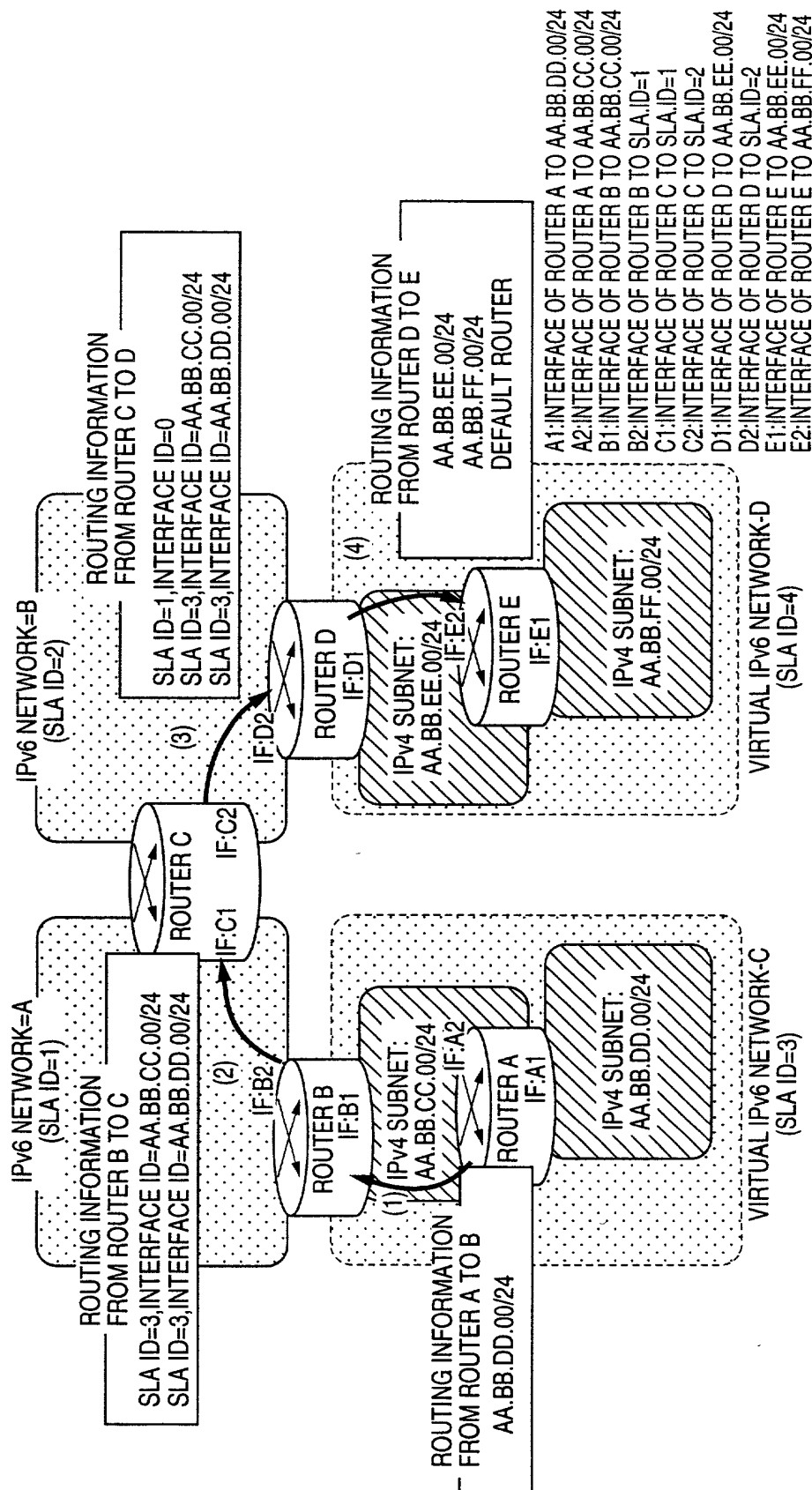


FIG.27

ROUTING TABLE OF ROUTER B

HIERARCHIAL ROUTING TABLE		CONVENTIONAL ROUTING TABLE	
ADDRESS	NEXT ROUTER	ADDRESS	NEXT ROUTER
SLA ID=3	IPv4	SLA ID=3	DIRECT(B1)
SLA ID=1	DIRECT(B2)	AA.BB.CC.00/24	
		SLA ID=3	DIRECT A(B1)
		AA.BB.DD.00/24	
		SLA ID=1	DIRECT (B2)

TRANSMISSION INTERFACE NAME IN PARENTHESIS

FIG.28

ROUTING TABLE OF ROUTER C

TABLE GENERATED BASED ON ROUTING INFORMATION FROM ROUTER B

HIERARCHIAL ROUTING TABLE		CONVENTIONAL ROUTING TABLE	
ADDRESS	NEXT ROUTER	ADDRESS	NEXT ROUTER
SLA ID=3	ROUTER B(C1)	SLA ID=3	ROUTER B(C1)
SLA ID=1	DIRECT(C1)	AA.BB.CC.00/24	
SLA ID=2	DIRECT(C2)	SLA ID=3	ROUTER B(C1)
		AA.BB.DD.00/24	
		SLA ID=2	DIRECT A(C2)
		SLA ID=1	DIRECT (C1)

TRANSMISSION INTERFACE NAME IN PARENTHESIS

FIG.29

ROUTING TABLE OF ROUTER D  TABLE GENERATED BASED ON ROUTING INFORMATION FROM ROUTER C

HIERARCHIAL ROUTING TABLE		CONVENTIONAL ROUTING TABLE	
ADDRESS	NEXT ROUTER	ADDRESS	NEXT ROUTER
SLA ID=3	ROUTER C(D2)	SLA ID=3	ROUTER C(D2)
SLA ID=1	DIRECT C(D2)	AA.BB.CC.00/24	
SLA ID=2	DIRECT(D2)	SLA ID=3	ROUTER C(D2)
SLA ID=4	IPv4(D1)	AA.BB.DD.00/24	
		SLA ID=1	ROUTER C(D2)
		SLA ID=2	DIRECT(D2)
		SLA ID=4	DIRECT(D1)
		AA.BB.EE.00/24	

TRANSMISSION INTERFACE NAME IN PARENTHESIS

FIG. 30

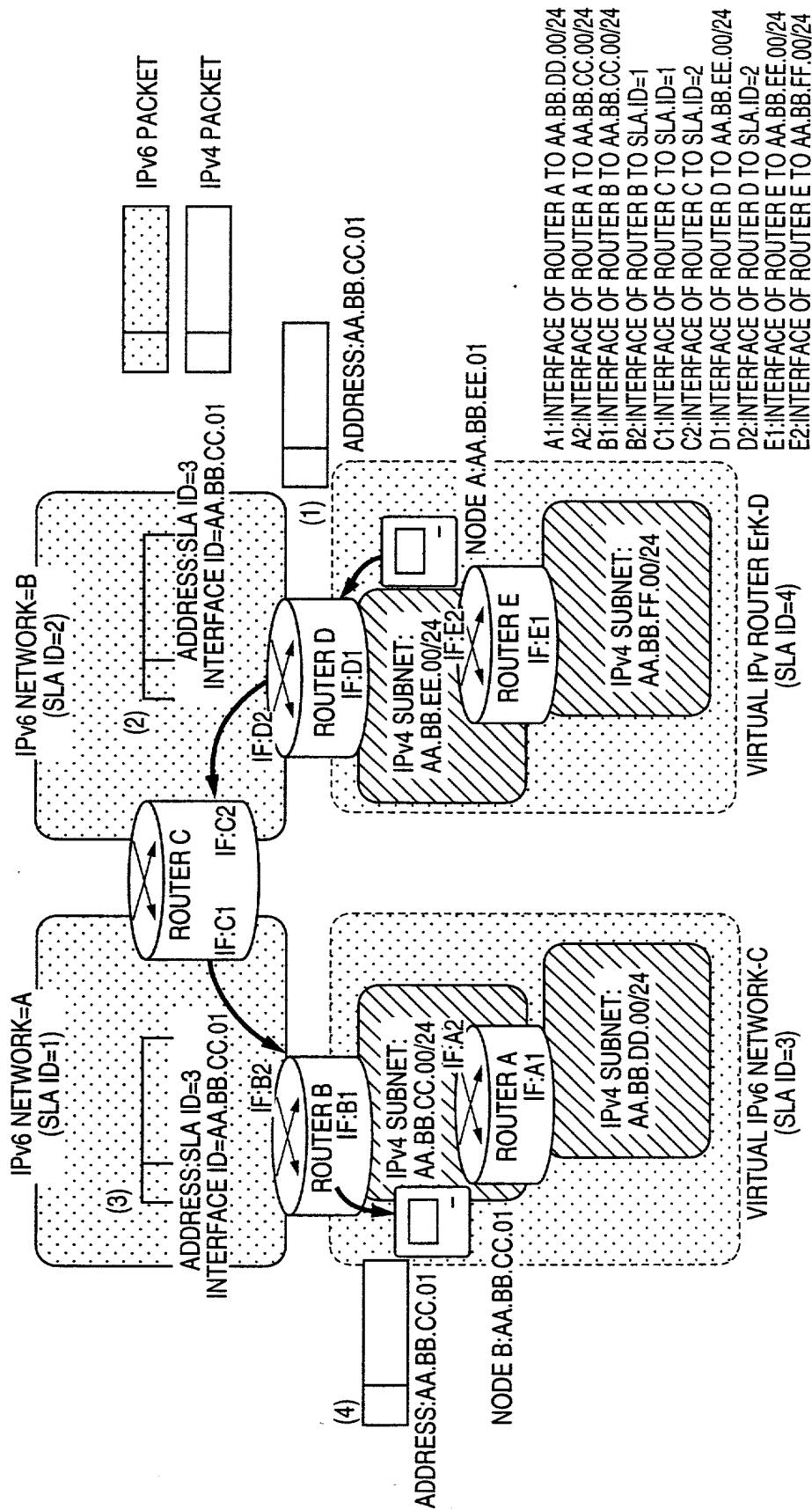


FIG.31

ROUTING TABLE OF ROUTER D  MATCHED ENTRY IN ROUTING SEARCH

HIERARCHIAL ROUTING TABLE		CONVENTIONAL ROUTING TABLE	
ADDRESS	NEXT ROUTER	ADDRESS	NEXT ROUTER
SLA ID=3	ROUTER C(D2)	SLA ID=3	ROUTER C(D2)
SLA ID=1	ROUTER C(D2)	AA.BB.CC.00/24	
SLA ID=2	DIRECT(D2)	SLA ID=3	ROUTER C(D2)
SLA ID=4	IPv4(D1)	AA.BB.DD.00/24	
		SLA ID=1	ROUTER C(D2)
		SLA ID=2	DIRECT(D2)
		SLA ID=4	DIRECT(D1)
		AA.BB.EE.00/24	

TRANSMISSION INTERFACE NAME IN PARENTHESIS

FIG.32

ROUTING TABLE OF ROUTER C

HIERARCHIAL ROUTING TABLE		CONVENTIONAL ROUTING TABLE	
ADDRESS	NEXT ROUTER	ADDRESS	NEXT ROUTER
SLA ID=3	ROUTER B(C1)	SLA ID=3	ROUTER B(C1)
SLA ID=1	DIRECT(C1)	AA.BB.CC.00/24	
SLA ID=2	DIRECT(C2)	SLA ID=3	ROUTER B(C1)
		AA.BB.DD.00/24	
		SLA ID=2	DIRECT(C2)
		SLA ID=1	DIRECT(C1)

TRANSMISSION INTERFACE NAME IN PARENTHESIS

FIG.33

ROUTING TABLE OF ROUTER B

